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<110> Arkowitz, Robert A
Nern, Peter MA
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- <151> 1998-10-08
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- <150> 09/529,106
- <151> 2000-04-07
- <150> US 09/732,180
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- <150> US 60/169,699
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- <150> PCT/GB98/03033
- <151> 1998-10-08
- <150> 9812793.9
- <151> 1998-06-12
- <150> 9721357.3
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- <210> 2
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Ile Asp Phe Gln Arg Arg Phe Leu Ile Ser Leu Glu Ile Asn Ala Leu 50 55 60

Val Glu Pro Ser Lys Gln Arg Ile Gly Ala Leu Phe Met His Ser Lys 65 70 75 80

His Phe Phe Lys Leu Tyr Glu Pro Trp Ser Ile Gly Gln Asn Ala Ala 85 90 95

Ile Glu Phe Leu Ser Ser Thr Leu His Lys Met Arg Val Asp Glu Ser 100 105 110

Gln Arg Phe Ile Ile Asn Asn Lys Leu Glu Leu Gln Ser Phe Leu Tyr 115 120 125

Lys Pro Val Gln Arg Leu Cys Arg Tyr Pro Leu Leu Val Lys Glu Leu 130 135 140

Leu Ala Glu Ser Ser Asp Asp Asn Asn Thr Lys Glu Leu Glu Ala Ala 145 150 155 160

Leu Asp Ile Ser Lys Asn Ile Ala Arg Ser Ile Asn Glu Asn Gln Arg 165 170 175

Arg Thr Glu Asn His Gln Val Val Lys Lys Leu Tyr Gly Arg Val Val 180 185 190

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His Ile Leu Thr Ala Ser Gly Asp Met Thr Cys Ala Leu Trp Asp Ile

Pro Lys Ala Lys Arg Val Arg Glu Tyr Ser Asp His Leu Gly Asp Val

215

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Thr Phe Ala Ser Cys Gly Ser Asp Gly Tyr Thr Tyr Ile Trp Asp Ser 245 250 255

Arg Ser Pro Ser Ala Val Gln Ser Phe Tyr Val Asn Asp Ser Asp Ile 260 265 270

Asn Ala Leu Arg Phe Phe Lys Asp Gly Met Ser Ile Val Ala Gly Ser 275 280 285

Asp Asn Gly Ala Ile Asn Met Tyr Asp Leu Arg Ser Asp Cys Ser Ile 290 295 300

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Phe Gln Met Ala Asn Lys Val Thr Ser Leu Thr Lys Asn Lys Ile Asn 65 70 75 80

Leu Lys Pro Asn Ile Val Leu Lys Gly His Asn Asn Lys Ile Ser Asp 85 90 95

Phe Arg Trp Ser Arg Asp Ser Lys Arg Ile Leu Ser Ala Ser Gln Asp 100 105 110

Gly Phe Met Leu Ile Trp Asp Ser Ala Ser Gly Leu Lys Gln Asn Ala 115 120 125

Ile Pro Leu Asp Ser Gln Trp Val Leu Ser Cys Ala Ile Ser Pro Ser 130 140

Ser Thr Leu Val Ala Ser Ala Gly Leu Asn Asn Asn Cys Thr Ile Tyr 145 150 155 160

Arg Val Ser Lys Glu Asn Arg Val Ala Gln Asn Val Ala Ser Ile Phe 165 170 175

Lys Gly His Thr Cys Tyr Ile Ser Asp Ile Glu Phe Thr Asp Asn Ala 180 185 190

His Ile Leu Thr Ala Ser Gly Asp Met Thr Cys Ala Leu Trp Asp Ile 195 200 205

Pro Lys Ala Lys Arg Val Arg Gly Tyr Ser Asp His Leu Gly Asp Val

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His Ile Leu Thr Ala Ser Gly Asp Met Thr Cys Ala Leu Trp Asp Ile



195 200 205

Pro Lys Ala Lys Arg Val Arg Glu Tyr Ser Asp His Leu Gly Asp Val 210 215 220

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Thr Phe Ala Ser Cys Gly Ser Asp Gly Tyr Thr Tyr Ile Trp Asp Ser 245 250 255

Arg Ser Pro Ser Ala Val Gln Ser Phe Tyr Val Asn Asp Ser Asp Ile 260 265 270

Asn Ala Leu Arg Phe Phe Lys Asp Gly Met Ser Ile Val Ala Gly Ser 275 280 285

Asp Asn Gly Ala Ile Asn Met Tyr Asp Leu Arg Ser Asp Cys Ser Ile 290 295 300

Ala Thr Phe Ser Leu Phe Arg Gly Tyr Glu Glu Arg Thr Pro Thr Pro 305 310 315 320

Thr Tyr Met Ala Ala Asn Met Glu Tyr Asn Thr Ala Gln Ser Pro Gln 325 330 335

Thr Leu Lys Ser Thr Ser Ser Ser Tyr Leu Asp Asn Gln Gly Ala Val 340 345 350

Ser Leu Asp Phe Ser Ala Ser Gly Arg Leu Met Tyr Ser Cys Tyr Thr 355 360 365

Asp Ile Gly Cys Val Val Trp Asp Val Leu Lys Gly Glu Ile Val Gly 370 375 380

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Lys Ser Ile
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gttaaagatg ctgaaaatga aaaggaatac gttgcttatc tttttgaaaa aatcgtattt 1560 tttttcacag aaattgatga taccaaaaaa tctgataaac aggaaaagaa gagcaagttt 1620 tcgacaagaa agagatcaac ttcatcaaat cttagttcat cgactactaa tttgttggaa 1680 tcaataaaca attcccgaaa ggataacaca ttgccattgg aattaaaggg aagagtttat 1740 atateggaga tttataacat tteegeacea aacaeteetg geteaactet aateatetea 1800 tggtcaggta gaaaggaaag cggctcattc actttgagat atcgtagtga agaagccaga 1860 aaccaatggg aaaagtgttt acgtgatttg aagactaatg aaatgaataa acaaattcat 1920 aagaagttac gtgattccga cctgtcattt aatactgatg actctgccat atatgattac 1980 ggctctcaca gttcccgcca tcactcatcg tcatccactt tgagtatgat gaagaataat 2100 agagttaaat etggtgattt gagtagaata tetteaaett caacaacatt agattettte 2160 agtaacaact tgaatgggtc accaaatacc actaatccat ctttgatgtc ttcagatgcc 2220 accaaaacaa ttccaacatt tgacgttgca attaaattgc tttacaaatc gacagaattg 2280 tcagagccat tgattgtcaa tgcacaaatt gagtataatg accttttaca gaaaattatc 2340 tcccagatta tcacttcgaa cttggtggca gatgatgtca atattagtcg attgagatat 2400 aaagacgacg aaggagactt tgtgaatttg aattcagatg atgattgggg gttagtgctt 2460 gatatgttaa ccagtgaaga cttttaccaa acatcaagca atgaaaaacg actggtgaca 2520 gtgtgggttt cttga

<210> 24

<211> 844

<212> PRT

<213> Candida albicans

<400> 24

Met Glu His Pro Pro Ala Ala Leu Arg Thr Phe Ser Thr Gln Ser Thr 1 5 10 15

Ser Ser Leu Asn Ser Val Ser Thr Val Ser Ser Ser Arg Ile Val Ser 20 25 30

Ser Gly Pro Val Asn Ile Asn Asn Phe Asn Lys Pro Ser Thr Pro Lys

Asp His Leu Phe Tyr Arg Cys Glu Ser Leu Lys Arg Lys Leu Gln Lys 50 55 60

Ile Pro Gly Met Glu Pro Phe Leu Asn Gln Ala Phe Asn Gln Ala Glu 65 70 75 80

Gln Leu Ser Glu Gln Gln Ala Leu Ala Leu Ala Gln Glu Arg Ser Asn 85 90 95

Gly Asn Gly His Ser Asn Gly Lys Arg His Gln Ser Leu Asp Gly Ala 100 105 110

Met Asn Arg Leu Ser Val Gly Ser Asp Ser Ser Ser Ile Gln Gly Ser 115

Leu Thr Arg Met Ala Thr Asn Ala Ser Thr Ser Ser Leu Ile Ser Gly
130 135 140

Ala Asn Ile Ser Val Asp Pro Ala Thr His Leu Trp Lys Leu Phe Gln
165 170 175

Gln Gly Ala Pro Phe Cys Val Leu Ile Asn His Ile Leu Pro Asp Ser 180 185 190

Gln Ile Pro Val Val Ser Ser Asp Asp Leu Arg Ile Cys Lys Lys Ser Val Tyr Asp Phe Leu Ile Ala Val Lys Thr Gln Leu Asn Phe Asp Asp 215 Glu Asn Met Phe Thr Ile Ser Asn Val Phe Ser Asp Asn Ala Gln Asp 230 Leu Ile Lys Ile Ile Asp Val Ile Asn Lys Leu Leu Ala Glu Tyr Ser Asp Ala Ser Asp Ser Gly Gly Gly Asp Glu Asp Val Asn Met Asp Val Gln Ile Thr Asp Glu Arg Ser Lys Val Phe Arg Glu Ile Ile Glu Thr Glu Arg Lys Tyr Val Gln Asp Leu Glu Leu Met Cys Lys Tyr Arg Gln Asp Leu Ile Glu Ala Glu Asn Leu Ser Ser Glu Gln Ile His Leu Leu 315 Phe Pro Asn Leu Asn Glu Ile Ile Asp Phe Gln Arg Arg Phe Leu Asn 325 330 Gly Leu Glu Cys Asn Ile Asn Val Pro Ile Arg Tyr Gln Arg Ile Gly 345 Ser Val Phe Ile His Ala Ser Leu Gly Pro Phe Asn Ala Tyr Glu Pro Trp Thr Ile Gly Gln Leu Thr Ala Ile Asp Leu Ile Asn Lys Glu Ala Ala Asn Leu Lys Lys Ser Ser Ser Leu Leu Asp Pro Gly Phe Glu Leu 395 Gln Ser Tyr Ile Leu Lys Pro Ile Gln Arg Leu Cys Lys Tyr Pro Leu Leu Leu Lys Glu Leu Ile Lys Thr Ser Pro Glu Tyr Ser Lys Gln Asp 425 Pro His Gly Ser Ser Ser Thr Ser Phe Asn Glu Leu Leu Val Ala Lys Thr Ala Met Lys Glu Leu Ala Asn Gln Val Asn Glu Ala Gln Arg 455 Arg Ala Glu Asn Ile Glu His Leu Glu Lys Leu Lys Glu Arg Val Gly 470 Asn Trp Arg Gly Phe Asn Leu Asp Ala Gln Gly Glu Leu Leu Phe His 485 Gly Gln Val Gly Val Lys Asp Ala Glu Asn Glu Lys Glu Tyr Val Ala

505



Tyr Leu Phe Glu Lys Ile Val Phe Phe Phe Thr Glu Ile Asp Asp Thr 520 Lys Lys Ser Asp Lys Gln Glu Lys Lys Ser Lys Phe Ser Thr Arg Lys Arg Ser Thr Ser Ser Asn Leu Ser Ser Ser Thr Thr Asn Leu Leu Glu 555 Ser Ile Asn Asn Ser Arg Lys Asp Asn Thr Leu Pro Leu Glu Leu Lys 570 Gly Arg Val Tyr Ile Ser Glu Ile Tyr Asn Ile Ser Ala Pro Asn Thr Pro Gly Ser Thr Leu Ile Ile Ser Trp Ser Gly Arg Lys Glu Ser Gly Ser Phe Thr Leu Arg Tyr Arg Ser Glu Glu Ala Arg Asn Gln Trp Glu Lys Cys Leu Arg Asp Leu Lys Thr Asn Glu Met Asn Lys Gln Ile His Lys Lys Leu Arg Asp Ser Asp Ser Ser Phe Asn Thr Asp Asp Ser Ala Ile Tyr Asp Tyr Thr Gly Ile Ser Thr Ser Pro Val Asn Gln Ser Thr 665 Gln Gln Gln Tyr Tyr Asp His Arg Gly Ser His Ser Ser Arg His His Ser Ser Ser Ser Thr Leu Ser Met Met Lys Asn Asn Arg Val Lys Ser 695 Gly Asp Leu Ser Arg Ile Ser Ser Thr Ser Thr Thr Leu Asp Ser Phe Ser Asn Asn Leu Asn Gly Ser Pro Asn Thr Thr Asn Pro Ser Leu Met 730 Ser Ser Asp Ala Thr Lys Thr Ile Pro Thr Phe Asp Val Ala Ile Lys Leu Leu Tyr Lys Ser Thr Glu Leu Ser Glu Pro Leu Ile Val Asn Ala Gln Ile Glu Tyr Asn Asp Leu Leu Gln Lys Ile Ile Ser Gln Ile Ile Thr Ser Asn Leu Val Ala Asp Asp Val Asn Ile Ser Arg Leu Arg Tyr 795 Lys Asp Asp Glu Gly Asp Phe Val Asn Leu Asn Ser Asp Asp Asp Trp 810 Gly Leu Val Leu Asp Met Leu Thr Ser Glu Asp Phe Tyr Gln Thr Ser 825

Ser Asn Glu Lys Arg Ser Val Thr Val Trp Val Ser



<210> 25

<211> 22

<212> PRT

<213> Saccharomyces cerevisiae

<400> 25

Lys Leu Pro Val Ile Ala Ser Asp Asp Leu Lys Val Cys Lys Lys Ser 1 5 10 15

Ile Tyr Asp Phe Ile Leu

<210> 26

<211> 22

<212> PRT

<213> Candida albicans

<400> 26

Gln Ile Pro Val Val Ser Ser Asp Asp Leu Arg Ile Cys Lys Lys Ser 1 5 10 15

Val Tyr Asp Phe Leu Ile 20

<210> 27

<211> 854

<212> PRT

<213> Saccharomyces cerevisiae

<400> 27

Met Ala Ile Gln Thr Arg Phe Ala Ser Gly Thr Ser Leu Ser Asp Leu 1 5 10 15

Lys Pro Lys Pro Ser Ala Thr Ser Ile Ser Ile Pro Met Gln Asn Val

Met Asn Lys Pro Val Thr Glu Gln Asp Ser Leu Phe His Ile Cys Ala 35 40 45

Asn Ile Arg Lys Arg Leu Glu Val Leu Pro Gln Leu Lys Pro Phe Leu 50 55 60

Gln Leu Ala Tyr Gln Ser Ser Glu Val Leu Ser Glu Arg Gln Ser Leu 65 70 75 80

Leu Leu Ser Gln Lys Gln His Gln Glu Leu Leu Lys Ser Asn Gly Ala 85 90 95

Asn Arg Asp Ser Ser Asp Leu Ala Pro Thr Leu Arg Ser Ser Ser Ile
100 105 110

Ser Thr Ala Thr Ser Leu Met Ser Met Glu Gly Ile Ser Tyr Thr Asn 115 120 125

Ser Asn Pro Ser Ala Thr Pro Asn Met Glu Asp Thr Leu Leu Thr Phe 130 135 140



Ser Met Gly Ile Leu Pro Ile Thr Met Asp Cys Asp Pro Val Thr Gln Leu Ser Gln Leu Phe Gln Gln Gly Ala Pro Leu Cys Ile Leu Phe Asn Ser Val Lys Pro Gln Phe Lys Leu Pro Val Ile Ala Ser Asp Asp Leu Lys Val Cys Lys Lys Ser Ile Tyr Asp Phe Ile Leu Gly Cys Lys His Phe Ala Phe Asn Asp Glu Glu Leu Phe Thr Ile Ser Asp Val Phe 210 215 Ala Asn Ser Thr Ser Gln Leu Val Lys Val Leu Glu Val Val Glu Thr 230 Leu Met Asn Ser Ser Pro Thr Ile Phe Pro Ser Lys Ser Lys Thr Gln 245 Gln Ile Met Asn Ala Glu Asn Gln His Arg His Gln Pro Gln Gln Ser 265 Ser Lys Lys His Asn Glu Tyr Val Lys Ile Ile Lys Glu Phe Val Ala Thr Glu Arg Lys Tyr Val His Asp Leu Glu Ile Leu Asp Lys Tyr Arg Gln Gln Leu Leu Asp Ser Asn Leu Ile Thr Ser Glu Glu Leu Tyr Met 310 Leu Phe Pro Asn Leu Gly Asp Ala Ile Asp Phe Gln Arg Arg Phe Leu 325 Ile Ser Leu Glu Ile Asn Ala Leu Val Glu Pro Ser Lys Gln Arg Ile 345 Gly Ala Leu Phe Met His Ser Lys His Phe Phe Lys Leu Tyr Glu Pro Trp Ser Ile Gly Gln Asn Ala Ala Ile Glu Phe Leu Ser Ser Thr Leu 375 His Lys Met Arg Val Asp Glu Ser Gln Arg Phe Ile Ile Asn Asn Lys Leu Glu Leu Gln Ser Phe Leu Tyr Lys Pro Val Gln Arg Leu Cys Arg Tyr Pro Leu Leu Val Lys Glu Leu Leu Ala Glu Ser Ser Asp Asn 425 Asn Thr Lys Glu Leu Glu Ala Ala Leu Asp Ile Ser Lys Asn Ile Ala 435 Arg Ser Ile Asn Glu Asn Gln Arg Arg Thr Glu Asn His Gln Val Val

460

Lys Lys Leu Tyr Gly Arg Val Val Asn Trp Lys Gly Tyr Arg Ile Ser Lys Phe Gly Glu Leu Leu Tyr Phe Asp Lys Val Phe Ile Ser Thr Thr Asn Ser Ser Ser Glu Pro Glu Arg Glu Phe Glu Val Tyr Leu Phe Glu Lys Ile Ile Ile Leu Phe Ser Glu Val Val Thr Lys Lys Ser Ala Ser Ser Leu Ile Leu Lys Lys Ser Ser Thr Ser Ala Ser Ile Ser Ala Ser Asn Ile Thr Asp Asn Asn Gly Ser Pro His His Ser Tyr His Lys Arg His Ser Asn Ser Ser Ser Ser Asn Asn Ile His Leu Ser Ser Ser Ser Ala Ala Ile Ile His Ser Ser Thr Asn Ser Ser Asp Asn Asn 580 585 Ser Asn Asn Ser Ser Ser Ser Leu Phe Lys Leu Ser Ala Asn Glu Pro Lys Leu Asp Leu Arg Gly Arg Ile Met Ile Met Asn Leu Asn Gln 615 Ile Ile Pro Gln Asn Asn Arg Ser Leu Asn Ile Thr Trp Glu Ser Ile Lys Glu Gln Gly Asn Phe Leu Leu Lys Phe Lys Asn Glu Glu Thr Arg Asp Asn Trp Ser Ser Cys Leu Gln Gln Leu Ile His Asp Leu Lys Asn 665 Glu Gln Phe Lys Ala Arg His His Ser Ser Thr Ser Thr Thr Ser Ser 680 Thr Ala Lys Ser Ser Ser Met Met Ser Pro Thr Thr Thr Met Asn Thr 695 Pro Asn His His Asn Ser Arg Gln Thr His Asp Ser Met Ala Ser Phe Ser Ser Ser His Met Lys Arg Val Ser Asp Val Leu Pro Lys Arg Arg Thr Thr Ser Ser Ser Phe Glu Ser Glu Ile Lys Ser Ile Ser Glu Asn 745 Phe Lys Asn Ser Ile Pro Glu Ser Ser Ile Leu Phe Arg Ile Ser Tyr 760 Asn Asn Asn Ser Asn Asn Thr Ser Ser Ser Glu Ile Phe Thr Leu Leu 775 Val Glu Lys Val Trp Asn Phe Asp Asp Leu Ile Met Ala Ile Asn Ser



785 790 795 800

Lys Ile Ser Asn Thr His Asn Asn Asn Ile Ser Pro Ile Thr Lys Ile 805 810 815

Lys Tyr Gln Asp Glu Asp Gly Asp Phe Val Val Leu Gly Ser Asp Glu 820 825 830

Asp Trp Asn Val Ala Lys Glu Met Leu Ala Glu Asn Asn Glu Lys Phe 835 840 845

Leu Asn Ile Arg Leu Tyr 850

<210> 28

<211> 837

<212> PRT

<213> Saccharomyces cerevisiae

<400> 28

Ser Gly Thr Ser Leu Ser Asp Leu Lys Pro Lys Pro Ser Ala Thr Ser 1 5 10 15

Ile Ser Ile Pro Met Gln Asn Val Met Asn Lys Pro Val Thr Glu Gln 20 25 30

Asp Ser Leu Phe His Ile Cys Ala Asn Ile Arg Lys Arg Leu Glu Val 35 40 45

Leu Pro Gln Leu Lys Pro Phe Leu Gln Leu Ala Tyr Gln Ser Ser Glu 50 60

Val Leu Ser Glu Arg Gln Ser Leu Leu Leu Ser Gln Lys Gln His Gln 65 70 75 80

Glu Leu Leu Lys Ser Asn Gly Ala Asn Arg Asp Ser Ser Asp Leu Ala 85 90 95

Pro Thr Leu Arg Ser Ser Ser Ile Ser Thr Ala Thr Ser Leu Met Ser 100 105 110

Met Glu Gly Ile Ser Tyr Thr Asn Ser Asn Pro Ser Ala Thr Pro Asn 115 120 125

Met Glu Asp Thr Leu Leu Thr Phe Ser Met Gly Ile Leu Pro Ile Thr 130 135 140

Met Asp Cys Asp Pro Val Thr Gln Leu Ser Gln Leu Phe Gln Gln Gly 145 150 155

Ala Pro Leu Cys Ile Leu Phe Asn Ser Val Lys Pro Gln Phe Lys Leu 165 170 175

Pro Val Ile Ala Ser Asp Asp Leu Lys Val Cys Lys Lys Ser Ile Tyr 180 185 190

Asp Phe Ile Leu Gly Cys Lys Lys His Phe Ala Phe Asn Asp Glu Glu 195 200 205

Leu Phe Thr Ile Ser Asp Val Phe Ala Asn Ser Thr Ser Gln Leu Val



210 215 220

Lys Val Leu Glu Val Val Glu Thr Leu Met Asn Ser Ser Pro Thr Ile 235 Phe Pro Ser Lys Ser Lys Thr Gln Gln Ile Met Asn Ala Glu Asn Gln 250 His Arg His Gln Pro Gln Gln Ser Ser Lys Lys His Asn Glu Tyr Val Lys Ile Ile Lys Glu Phe Val Ala Thr Glu Arg Lys Tyr Val His Asp Leu Glu Ile Leu Asp Lys Tyr Arg Gln Gln Leu Leu Asp Ser Asn Leu Ile Thr Ser Glu Glu Leu Tyr Met Leu Phe Pro Asn Leu Gly Asp Ala 315 Ile Asp Phe Gln Arg Arg Phe Leu Ile Ser Leu Glu Ile Asn Ala Leu Val Glu Pro Ser Lys Gln Arg Ile Gly Ala Leu Phe Met His Ser Lys His Phe Phe Lys Leu Tyr Glu Pro Trp Ser Ile Gly Gln Asn Ala Ala 360 Ile Glu Phe Leu Ser Ser Thr Leu His Lys Met Arg Val Asp Glu Ser 375 Gln Arg Phe Ile Ile Asn Asn Lys Leu Glu Leu Gln Ser Phe Leu Tyr Lys Pro Val Gln Arg Leu Cys Arg Tyr Pro Leu Leu Val Lys Glu Leu Leu Ala Glu Ser Ser Asp Asp Asn Asn Thr Lys Glu Leu Glu Ala Ala 420 Leu Asp Ile Ser Lys Asn Ile Ala Arg Ser Ile Asn Glu Asn Gln Arg 440 Arg Thr Glu Asn His Gln Val Val Lys Lys Leu Tyr Gly Arg Val Val Asn Trp Lys Gly Tyr Arg Ile Ser Lys Phe Gly Glu Leu Leu Tyr Phe 475 Asp Lys Val Phe Ile Ser Thr Thr Asn Ser Ser Ser Glu Pro Glu Arg 490 Glu Phe Glu Val Tyr Leu Phe Glu Lys Ile Ile Leu Phe Ser Glu Val Val Thr Lys Lys Ser Ala Ser Ser Leu Ile Leu Lys Lys Lys Ser 520 Ser Thr Ser Ala Ser Ile Ser Ala Ser Asn Ile Thr Asp Asn Asn Gly 530





Ser Pro His His Ser Tyr His Lys Arg His Ser Asn Ser Ser Ser 550 Asn Asn Ile His Leu Ser Ser Ser Ala Ala Ala Ile Ile His Ser 570 Ser Thr Asn Ser Ser Asp Asn Asn Ser Asn Asn Ser Ser Ser Ser 585 Leu Phe Lys Leu Ser Ala Asn Glu Pro Lys Leu Asp Leu Arg Gly Arg 600 Ile Met Ile Met Asn Leu Asn Gln Ile Ile Pro Gln Asn Asn Arg Ser Leu Asn Ile Thr Trp Glu Ser Ile Lys Glu Gln Gly Asn Phe Leu Leu Lys Phe Lys Asn Glu Glu Thr Arg Asp Asn Trp Ser Ser Cys Leu Gln 650 Gln Leu Ile His Asp Leu Lys Asn Glu Gln Phe Lys Ala Arg His His 665 Ser Ser Thr Ser Thr Ser Ser Thr Ala Lys Ser Ser Ser Met Met Ser Pro Thr Thr Met Asn Thr Pro Asn His His Asn Ser Arg Gln Thr His Asp Ser Met Ala Ser Phe Ser Ser Ser His Met Lys Arg Val Ser Asp Val Leu Pro Lys Arg Arg Thr Thr Ser Ser Ser Phe Glu Ser 730 Glu Ile Lys Ser Ile Ser Glu Asn Phe Lys Asn Ser Ile Pro Glu Ser Ser Ile Leu Phe Arg Ile Ser Tyr Asn Asn Asn Ser Asn Asn Thr Ser Ser Ser Glu Ile Phe Thr Leu Leu Val Glu Lys Val Trp Asn Phe Asp Asp Leu Ile Met Ala Ile Asn Ser Lys Ile Ser Asn Thr His Asn Asn Asn Ile Ser Pro Ile Thr Lys Ile Lys Tyr Gln Asp Glu Asp Gly Asp 805 Phe Val Val Leu Gly Ser Asp Glu Asp Trp Asn Val Ala Lys Glu Met 825

<210> 29 <211> 813

Leu Ala Glu Asn Asn 835 <212> PRT <213> Candida albicans

<400> 29

Ser Thr Ser Ser Leu Asn Ser Val Ser Thr Val Ser Ser Ser Arg Ile

1 10 15

Val Ser Ser Gly Pro Val Asn Ile Asn Asn Phe Asn Lys Pro Ser Thr 20 25 30

Pro Lys Asp His Leu Phe Tyr Arg Cys Glu Ser Leu Lys Arg Lys Leu 35 40

Gln Lys Ile Pro Gly Met Glu Pro Phe Leu Asn Gln Ala Phe Asn Gln 50 55 60

Ala Glu Gln Leu Ser Glu Gln Gln Ala Leu Ala Leu Ala Gln Glu Arg 65 70 75 80

Ser Asn Gly Asn Gly His Ser Asn Gly Lys Arg His Gln Ser Leu Asp 85 90 95

Gly Ala Met Asn Arg Leu Ser Val Gly Ser Asp Ser Ser Ser Ile Gln 100 105 110

Gly Ser Leu Thr Arg Met Ala Thr Asn Ala Ser Thr Ser Ser Leu Ile 115 120 . 125

Ser Gly Met Pro Asn Asn Asn Thr Leu Phe Thr Phe Thr Ala Gly Val

Leu Pro Ala Asn Ile Ser Val Asp Pro Ala Thr His Leu Trp Lys Leu 145 150 155 160

Phe Gln Gln Gly Ala Pro Phe Cys Val Leu Ile Asn His Ile Leu Pro 165 170 175

Asp Ser Gln Ile Pro Val Val Ser Ser Asp Asp Leu Arg Ile Cys Lys 180 185 190

Lys Ser Val Tyr Asp Phe Leu Ile Ala Val Lys Thr Gln Leu Asn Phe
195 200 205

Asp Asp Glu Asn Met Phe Thr Ile Ser Asn Val Phe Ser Asp Asn Ala 210 215 220

Gln Asp Leu Ile Lys Ile Ile Asp Val Ile Asn Lys Leu Leu Ala Glu 225 235 240

Tyr Ser Asp Ala Ser Asp Ser Gly Gly Gly Asp Glu Asp Val Asn Met 245 250 255

Asp Val Gln Ile Thr Asp Glu Arg Ser Lys Val Phe Arg Glu Ile Ile 260 265 270

Glu Thr Glu Arg Lys Tyr Val Gln Asp Leu Glu Leu Met Cys Lys Tyr 275 280 285

Arg Gln Asp Leu Ile Glu Ala Glu Asn Leu Ser Ser Glu Gln Ile His 290 295 300



Leu Leu Phe Pro Asn Leu Asn Glu Ile Ile Asp Phe Gln Arg Arg Phe 315 310 Leu Asn Gly Leu Glu Cys Asn Ile Asn Val Pro Ile Arg Tyr Gln Arg 330 Ile Gly Ser Val Phe Ile His Ala Ser Leu Gly Pro Phe Asn Ala Tyr Glu Pro Trp Thr Ile Gly Gln Leu Thr Ala Ile Asp Leu Ile Asn Lys 360 Glu Ala Ala Asn Leu Lys Lys Ser Ser Ser Leu Leu Asp Pro Gly Phe 375 Glu Leu Gln Ser Tyr Ile Leu Lys Pro Ile Gln Arg Leu Cys Lys Tyr 395 Pro Leu Leu Lys Glu Leu Ile Lys Thr Ser Pro Glu Tyr Ser Lys Gln Asp Pro His Gly Ser Ser Ser Ser Thr Ser Phe Asn Glu Leu Leu Val Ala Lys Thr Ala Met Lys Glu Leu Ala Asn Gln Val Asn Glu Ala 440 Gln Arg Arg Ala Glu Asn Ile Glu His Leu Glu Lys Leu Lys Glu Arg Val Gly Asn Trp Arg Gly Phe Asn Leu Asp Ala Gln Gly Glu Leu Leu 475 Phe His Gly Gln Val Gly Val Lys Asp Ala Glu Asn Glu Lys Glu Tyr 490 Val Ala Tyr Leu Phe Glu Lys Ile Val Phe Phe Phe Thr Glu Ile Asp Asp Thr Lys Lys Ser Asp Lys Gln Glu Lys Lys Ser Lys Phe Ser Thr 520 Arg Lys Arg Ser Thr Ser Ser Asn Leu Ser Ser Ser Thr Thr Asn Leu Leu Glu Ser Ile Asn Asn Ser Arg Lys Asp Asn Thr Leu Pro Leu Glu 550 Leu Lys Gly Arg Val Tyr Ile Ser Glu Ile Tyr Asn Ile Ser Ala Pro 565 Asn Thr Pro Gly Ser Thr Leu Ile Ile Ser Trp Ser Gly Arg Lys Glu Ser Gly Ser Phe Thr Leu Arg Tyr Arg Ser Glu Glu Ala Arg Asn Gln 600 Trp Glu Lys Cys Leu Arg Asp Leu Lys Thr Asn Glu Met Asn Lys Gln 615 Ile His Lys Lys Leu Arg Asp Ser Asp Ser Phe Asn Thr Asp Asp



625 630 635 640

Ser Ala Ile Tyr Asp Tyr Thr Gly Ile Ser Thr Ser Pro Val Asn Gln 645 655

Ser Thr Gln Gln Gln Tyr Tyr Asp His Arg Gly Ser His Ser Ser Arg 660 665 670

His His Ser Ser Ser Ser Thr Leu Ser Met Met Lys Asn Asn Arg Val 675 680 685

Lys Ser Gly Asp Leu Ser Arg Ile Ser Ser Thr Ser Thr Thr Leu Asp 690 695 700

Ser Phe Ser Asn Asn Leu Asn Gly Ser Pro Asn Thr Thr Asn Pro Ser 705 710 715 720

Leu Met Ser Ser Asp Ala Thr Lys Thr Ile Pro Thr Phe Asp Val Ala 725 730 735

Ile Lys Leu Leu Tyr Lys Ser Thr Glu Leu Ser Glu Pro Leu Ile Val 740 745 750

Asn Ala Gln Ile Glu Tyr Asn Asp Leu Leu Gln Lys Ile Ile Ser Gln 755 760 765

Ile Ile Thr Ser Asn Leu Val Ala Asp Asp Val Asn Ile Ser Arg Leu 770 780

Arg Tyr Lys Asp Asp Glu Gly Asp Phe Val Asn Leu Asn Ser Asp Asp 785 790 795 800

Asp Trp Gly Leu Val Leu Asp Met Leu Thr Ser Glu Asp 805

<210> 30

<211> 684

<212> PRT

<213> Saccharomyces cerevisiae

<400> 30

Asp Pro Val Thr Gln Leu Ser Gln Leu Phe Gln Gln Gly Ala Pro Leu

1 5 10 15

Cys Ile Leu Phe Asn Ser Val Lys Pro Gln Phe Lys Leu Pro Val Ile 20 25 30

Ala Ser Asp Asp Leu Lys Val Cys Lys Lys Ser Ile Tyr Asp Phe Ile
35
40

Leu Gly Cys Lys Lys His Phe Ala Phe Asn Asp Glu Glu Leu Phe Thr 50 60

Ile Ser Asp Val Phe Ala Asn Ser Thr Ser Gln Leu Val Lys Val Leu 65 70 75 80

Glu Val Val Glu Thr Leu Met Asn Ser Ser Pro Thr Ile Phe Pro Ser 85 90 95

Lys Ser Lys Thr Gln Gln Ile Met Asn Ala Glu Asn Gln His Arg His





			100					105					110		
Gln	Pro	Gln 115	Gln	Ser	Ser	Lys	Lys 120	His	Asn	Glu	Tyr	Val 125	Lys	Ile	Ile
Lys	Glu 130	Phe	Val	Ala	Thr	Glu 135	Arg	Lys	Tyr	Val	His 140	Asp	Leu	Glu	Ile
Leu 145	Asp	Lys	Tyr	Arg	Gln 150	Gln	Leu	Leu	Asp	Ser 155	Asn	Leu	Ile	Thr	Ser 160
Glu	Glu	Leu	Tyr	Met 165	Leu	Phe	Pro	Asn	Leu 170	Gly	Asp	Ala	Ile	Asp 175	Phe
Gln	Arg	Arg	Phe 180	Leu	Ile	Ser	Leu	Glu 185	Ile	Asn	Ala	Leu	Val 190	Glu	Pro
Ser	Lys	Gln 195	Arg	Ile	Gly	Ala	Leu 200	Phe	Met	His	Ser	Lys 205	His	Phe	Phe
Lys	Leu 210	Tyr	Glu	Pro	Trp	Ser 215	Ile	Gly	Gln	Asn	Ala 220	Ala	Ile	Glu	Phe
Leu 225	Ser	Ser	Thr	Leu	His 230	Lys	Met	Arg	Val	Asp 235	Glu	Ser	Gln	Arg	Phe 240
Ile	Ile	Asn	Asn	Lys 245	Leu	Glu	Leu	Gln	Ser 250	Phe	Leu	Tyr	Lys	Pro 255	Val
Gln	Arg	Leu	Сув 260	Arg	Tyr	Pro	Leu	Leu 265	Val	Lys	Glu	Leu	Leu 270	Ala	Glu
Ser	Ser	Asp 275	Asp	Asn	Asn	Thr	Lys 280	Glu	Leu	Glu	Ala	Ala 285	Leu	Asp	Ile
Ser	Lys 290	Asn	Ile	Ala	Arg	Ser 295		Asn	Glu	Asn	Gln 300	Arg	Arg	Thr	Glu
Asn 305	His	Gln	Val	Val	Lys 310	Lys	Leu	Tyr	Gly	Arg 315	Val	Val	Asn	Trp	Lys 320
Gly	Tyr	Arg	Ile	Ser 325		Phe	Gly	Glu	Leu 330		Tyr	Phe	Asp	Lys 335	Val
Phe	Ile	Ser	Thr 340		Asn	Ser	Ser	Ser 345		Pro	Glu	Arg	Glu 350		Glu
Val	Tyr	Leu 355		Glu	Lys	Ile	Ile 360		Leu	Phe	Ser	Glu 365		Val	Thr
Lys	Lys 370		Ala	Ser	Ser	Leu 375		Leu	Lys	Lys	Lys 380		Ser	Thr	Ser
Ala 385		Ile	Ser	Ala	Ser 390		Ile	Thr	Asp	Asn 395		Gly	Ser	Pro	His 400
His	Ser	Tyr	His	Lys 405		His	Ser	Asn	Ser 410		Ser	Ser	Asn	Asn 415	Ile
His	Leu	Ser	Ser 420		Ser	Ala	Ala	Ala 425		: Il∈	His	s Ser	Ser 430		Asn





Ser Ser Asp Asn Asn Ser Asn Ser Ser Ser Ser Ser Leu Phe Lys 435 440 445

Leu Ser Ala Asn Glu Pro Lys Leu Asp Leu Arg Gly Arg Ile Met Ile 450 455 460

Met Asn Leu Asn Gln Ile Ile Pro Gln Asn Asn Arg Ser Leu Asn Ile 465 470 475 480

Thr Trp Glu Ser Ile Lys Glu Gln Gly Asn Phe Leu Leu Lys Phe Lys
485
490
495

Asn Glu Glu Thr Arg Asp Asn Trp Ser Ser Cys Leu Gln Gln Leu Ile 500 505 510

His Asp Leu Lys Asn Glu Gln Phe Lys Ala Arg His His Ser Ser Thr 515 520 525

Ser Thr Thr Ser Ser Thr Ala Lys Ser Ser Ser Met Met Ser Pro Thr 530 535 540

Thr Thr Met Asn Thr Pro Asn His His Asn Ser Arg Gln Thr His Asp 545 550 555

Ser Met Ala Ser Phe Ser Ser Ser His Met Lys Arg Val Ser Asp Val
565 570 575

Leu Pro Lys Arg Arg Thr Thr Ser Ser Ser Phe Glu Ser Glu Ile Lys 580 585 590

Ser Ile Ser Glu Asn Phe Lys Asn Ser Ile Pro Glu Ser Ser Ile Leu 595 600 605

Phe Arg Ile Ser Tyr Asn Asn Asn Ser Asn Asn Thr Ser Ser Glu 610 615 620

Ile Phe Thr Leu Leu Val Glu Lys Val Trp Asn Phe Asp Asp Leu Ile 625 630 635 640

Met Ala Ile Asn Ser Lys Ile Ser Asn Thr His Asn Asn Asn Ile Ser 645 650 655

Pro Ile Thr Lys Ile Lys Tyr Gln Asp Glu Asp Gly Asp Phe Val Val 660 665 670

Leu Gly Ser Asp Glu Asp Trp Asn Val Ala Lys Glu 675

<210> 31

<211> 742

<212> PRT

<213> Schizosaccharomyces pombe

<400> 31

Asp Pro Val Thr Glu Ile Trp Leu Phe Cys Arg Leu Gly Tyr Pro Leu 1 5 10 15

Cys Ala Leu Phe Asn Cys Leu Pro Val Lys Gln Lys Leu Glu Val Asn





Ser Ser Val Ser Leu Glu Asn Thr Asn Val Cys Lys Ala Ser Leu Tyr Arg Phe Met Leu Met Cys Lys Asn Glu Leu Gly Leu Thr Asp Ala Ala Leu Phe Ser Ile Ser Glu Ile Tyr Lys Pro Ser Thr Ala Pro Leu Val Arg Ala Leu Gln Thr Ile Glu Leu Leu Leu Lys Lys Tyr Glu Val Ser Asn Thr Thr Lys Ser Ser Ser Thr Pro Ser Pro Ser Thr Asp Asp Asn 105 Val Pro Thr Gly Thr Leu Asn Ser Leu Ile Ala Ser Gly Arg Arg Val 120 Thr Ala Glu Leu Tyr Glu Thr Glu Leu Lys Tyr Ile Gln Asp Leu Glu 135 Tyr Leu Ser Asn Tyr Met Val Ile Leu Gln Gln Lys Gln Ile Leu Ser Gln Asp Thr Ile Leu Ser Ile Phe Thr Asn Leu Asn Glu Ile Leu Asp 170 Phe Gln Arg Arg Phe Leu Val Gly Leu Glu Met Asn Leu Ser Leu Pro 185 Val Glu Glu Gln Arg Leu Gly Ala Leu Phe Ile Ala Leu Glu Gly 200 Phe Ser Val Tyr Gln Val Phe Cys Thr Asn Phe Pro Asn Ala Gln Gln Leu Ile Ile Asp Asn Gln Asn Gln Leu Leu Lys Val Ala Asn Leu Leu Glu Pro Ser Tyr Glu Leu Pro Ala Leu Leu Ile Lys Pro Ile Gln Arg 250 Ile Cys Lys Tyr Pro Leu Leu Leu Asn Gln Leu Leu Lys Gly Thr Pro 265 Ser Gly Tyr Gln Tyr Glu Glu Glu Leu Lys Gln Gly Met Ala Cys Val Val Arg Val Ala Asn Gln Val Asn Glu Thr Arg Arg Ile His Glu Asn 295 Arg Asn Ala Ile Ile Glu Leu Glu Gln Arg Val Ile Asp Trp Lys Gly

Tyr Ser Leu Gln Tyr Phe Gly Gln Leu Leu Val Trp Asp Val Val Asn

Val Cys Lys Ala Asp Ile Glu Arg Glu Tyr His Val Tyr Leu Phe Glu 340 345 350

315



THE RESIDENCE OF THE PART OF T

Lys Ile Leu Leu Cys Cys Lys Glu Met Ser Thr Leu Lys Arg Gln Ala Arg Ser Ile Ser Met Asn Lys Lys Thr Lys Arg Leu Asp Ser Leu Gln

375

Leu Lys Gly Arg Ile Leu Thr Ser Asn Ile Thr Thr Val Val Pro Asn 395

His His Met Gly Ser Tyr Ala Ile Gln Ile Phe Trp Arg Gly Asp Pro 410

Gln His Glu Ser Phe Ile Leu Lys Leu Arg Asn Glu Glu Ser His Lys

Leu Trp Met Ser Val Leu Asn Arg Leu Leu Trp Lys Asn Glu His Gly

Ser Pro Lys Asp Ile Arg Ser Ala Ala Ser Thr Pro Ala Asn Pro Val 455

Tyr Asn Arg Ser Ser Ser Gln Thr Ser Lys Gly Tyr Asn Ser Ser Asp

Tyr Asp Leu Leu Arg Thr His Ser Leu Asp Glu Asn Val Asn Ser Pro

Thr Ser Ile Ser Ser Pro Ser Ser Lys Ser Ser Pro Phe Thr Lys Thr

Thr Ser Lys Asp Thr Lys Ser Ala Thr Thr Thr Asp Glu Arg Pro Ser 520

Asp Phe Ile Arg Leu Asn Ser Glu Glu Ser Val Gly Thr Ser Ser Leu 535

Arg Thr Ser Gln Thr Thr Ser Thr Ile Val Ser Asn Asp Ser Ser Ser 555

Thr Ala Ser Ile Pro Ser Gln Ile Ser Arg Ile Ser Gln Val Asn Ser

Leu Leu Asn Asp Tyr Asn Tyr Asn Arg Gln Ser His Ile Thr Arg Val 580

Tyr Ser Gly Thr Asp Asp Gly Ser Ser Val Ser Ile Phe Glu Asp Thr 600

Ser Ser Ser Thr Lys Gln Lys Ile Phe Asp Gln Pro Thr Thr Asn Asp

Cys Asp Val Met Arg Pro Arg Gln Tyr Ser Tyr Ser Ala Gly Met Lys 630

Ser Asp Gly Ser Leu Leu Pro Ser Thr Lys His Thr Ser Leu Ser Ser 645 650

Ser Ser Thr Ser Thr Ser Leu Ser Val Arg Asn Thr Thr Asn Val Lys

Ile Arg Leu Arg Leu His Glu Val Ser Leu Val Leu Val Val Ala His



675 680 685

Asp Ile Thr Phe Asp Glu Leu Leu Ala Lys Val Glu His Lys Ile Lys 690 700

Leu Cys Gly Ile Leu Lys Gln Ala Val Pro Phe Arg Val Arg Leu Lys 705 710 715 720

Tyr Val Asp Glu Asp Gly Asp Phe Ile Thr Ile Thr Ser Asp Glu Asp 725 730 735

Val Leu Met Ala Phe Glu 740

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Pro Phe Cys Val Leu Ile Asn His Ile Leu Pro Asp Ser Gln Ile Pro

Val Val Ser Ser Asp Asp Leu Arg Ile Cys Lys Lys Ser Val Tyr Asp
20 25 30

Phe Leu Ile Ala Val Lys Thr Gln Leu Asn Phe Asp Asp Glu Asn Met

Phe Thr Ile Ser Asn Val Phe Ser Asp Asn Ala Gln Asp Leu Ile Lys 50 55 60

40

Ile Ile Asp Val Ile Asn Lys Leu Leu Ala Glu Tyr 65 70 75

<210> 35 <211> 19 <212> PRT <213> Candida albicans <400> 35

Asp Ser Gln Ile Pro Val Val Ser Ser Asp Asp Leu Arg Ile Cys Lys 1 5 10 15

Lys Ser Val

35

<210> 36

<211> 73

<212> PRT

<213> Candida albicans

<400> 36

Pro Phe Cys Val Leu Ile Asn His Ile Leu Pro Asp Ser Gln Ile Pro 1 5 10 15

Val Val Ser Ser Asp Asp Leu Arg Ile Cys Lys Lys Ser Val Tyr Asp 20 25 30

Phe Leu Ile Ala Val Lys Thr Gln Leu Asn Phe Asp Asp Glu Asn Met 35 40 45

Phe Thr Ile Ser Asn Val Phe Ser Asp Asn Ala Gln Asp Leu Ile Lys 50 60

Ile Ile Asp Val Ile Asn Lys Leu Leu 65 70

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<211> 73

<212> PRT

<213> Saccharomyces cerevisiae

<400> 37

Pro Leu Cys Ile Leu Phe Asn Ser Val Lys Pro Gln Phe Lys Leu Pro 1 5 10 15

Val Ile Ala Ser Asp Asp Leu Lys Val Cys Lys Lys Ser Ile Tyr Asp 20 25 30

Phe Ile Leu Gly Cys Lys Lys His Phe Ala Phe Asn Asp Glu Glu Leu 35 40 45

Phe Thr Ile Ser Asp Val Phe Ala Asn Ser Thr Ser Gln Leu Val Lys 50 60

Val Leu Glu Val Val Glu Thr Leu Met